IN THE CLAIMS:

Please amend the claims as follows:

1. (Original) An apparatus for permanently measuring wellbore or formation parameters, comprising:

a casing string permanently located within a wellbore; and

at least one optical sensor attached to the casing string, the at least one optical sensor capable of measuring one or more wellbore or formation parameters.

2. (Original) The apparatus of claim 1, wherein the at least one optical sensor is attached to an outer surface of the casing string.

3. (Original) The apparatus of claim 1, wherein the at least one optical sensor is attached to an inner surface of the casing string.

4. (Original) The apparatus of claim 1, wherein the at least one optical sensor is attached to the casing string by welding.

5. (Original) The apparatus of claim 1, wherein the at least one optical sensor is attached to the casing string by at least one sensor carrier, the at least one optical sensor disposed within the at least one sensor carrier.

6. (Original) The apparatus of claim 5, wherein the at least one optical sensor is attached to the casing string by welding the at least one sensor carrier to the casing string.

7. (Original) The apparatus of claim 5, wherein the at least one optical sensor is attached to the casing string by firmly clamping the at least one sensor carrier to the casing string.

8. (Original) The apparatus of claim 1, wherein at least a portion of the casing string comprises a protective pocket attached thereto, and wherein the at least one optical sensor is attached to the casing string by location within the protective pocket.

9. (Original) The apparatus of claim 8, wherein the protective pocket is disposed around an outer surface of the casing string.

10. (Original) The apparatus of claim 8, wherein the protective pocket is disposed around an inner surface of the casing string.

11. (Original) The apparatus of claim 8, wherein the protective pocket is disposed around the casing string by threaded connection.

12. (Original) The apparatus of claim 8, wherein the protective pocket is disposed around the casing string by welding.

13. (Original) The apparatus of claim 1, wherein the one or more wellbore or formation parameters comprises pressure, temperature, seismic conditions, acoustics, fluid composition within a formation, or combinations thereof.

14. (Original) The apparatus of claim 1, wherein a plurality of optical sensors are attached to the casing string.

15. (Withdrawn) The apparatus of claim 14, wherein the plurality of optical sensors attached to the casing string comprise a flow meter.

16. (Withdrawn) The apparatus of claim 14, wherein the one or more wellbore parameters are used to calculate flow rate of drilling fluid flowing through the casing string, one or more component fractions of components present in the drilling fluid, or combinations thereof.

17. (Original) An apparatus for permanently measuring wellbore or formation parameters, comprising:

a casing string permanently located within a wellbore; and

at least one optical sensor located at least partially within a wall of the casing string, the at least one optical sensor capable of measuring one or more wellbore or formation parameters.

18. (Original) The apparatus of claim 17, further comprising an optical cable located within the wall of the casing string, the optical cable connecting the at least one optical sensor to a signal interface.

19. (Original) The apparatus of claim 17, wherein the at least one optical sensor is located completely within the wall of the casing string.

20. (Original) The apparatus of claim 17, wherein the one or more wellbore or formation parameters comprises pressure, temperature, seismic conditions, acoustics, flow rate of drilling fluid, component fractions of components present in the drilling fluid, fluid composition within a formation, or combinations thereof.

21. (Original) The apparatus of claim 17, wherein a plurality of optical sensors are located at least partially within the wall of the casing string.

22. (Withdrawn) The apparatus of claim 21, wherein the plurality of optical sensors located at least partially within the wall of the casing string comprise a flow meter capable of measuring flow rate or component fractions of fluid flowing within the casing string.

23. (Original) A method of permanently monitoring wellbore or formation parameters, comprising:

providing a casing string having at least one optical sensor attached thereto;

locating the casing string within a wellbore; and

measuring one or more wellbore or formation parameters with the at least one optical sensor.

24. (Original) The method of claim 23, wherein locating the casing string within the wellbore comprises:

lowering the casing string into the wellbore; and

setting the casing string within the wellbore with a bonding material

25. (Original) The method of claim 23, wherein locating the casing string within the wellbore comprises:

introducing the casing string having an earth removal member operatively attached to its lower end into a formation; and

measuring one or more wellbore or formation parameters with the at least one optical sensor while drilling with the casing string.

26. (Original) The method of claim 23, further comprising transmitting the measured wellbore or formation parameters to a signal interface for processing into readable information via one or more optical fibers.

27. (Original) The method of claim 23, wherein the one or more wellbore or formation parameters comprises flow rate of fluid flowing through the casing string, component fractions of the fluid, pressure, temperature, seismic measurements, acoustic measurements, or combinations thereof.

28. (Original) The method of claim 23, wherein measuring one or more wellbore or formation parameters with the at least one optical sensor comprises:

introducing a tubular body having an earth removal member operatively attached to its lower end into the casing string; and

measuring one or more wellbore or formation parameters using the at least one optical sensor while drilling with the tubular body.

29. (Original) The method of claim 28, further comprising adjusting wellbore conditions based on the one or more wellbore or formation parameters while drilling with the tubular body.

30. (Original) The method of claim 29, wherein adjusting wellbore conditions comprises adjusting a flow rate of a drilling fluid while drilling.

31. (Original) The method of claim 29, wherein adjusting wellbore conditions comprises adjusting a composition of a drilling fluid while drilling.

32. (Original) The method of claim 28, further comprising altering a trajectory of the wellbore while drilling with the tubular body using the one or more wellbore or formation parameters.

33. (Original) The method of claim 23, wherein measuring one or more wellbore or formation parameters with the at least one optical sensor is accomplished during hydrocarbon production operations.

34-45. (Canceled)

46. (Previously Presented) A method of measuring while drilling into a formation, comprising:

locating a casing string within a wellbore, the casing string having at least one sensor attached thereto;

drilling into the formation using a tubular body;

measuring at least one formation parameter using the at least one sensor while drilling into the formation; and

geosteering the tubular body using the measurements obtained while drilling.

47. (Previously Presented) The method of claim 46, further comprising predicting pore pressure within the formation using the measurements obtained while drilling.

48. (Previously Presented) The method of claim 46, further comprising troubleshooting using the measurements obtained while drilling.

49. (Previously Presented) The method of claim 46, further comprising maximizing production from the formation using the measurements obtained while drilling.

50. (Previously Presented) The method of claim 46, wherein the at least one sensor comprises at least one optical sensor.

51. (Previously Presented) The method of claim 50, wherein the at least one optical sensor comprises at least one optical seismic sensor.

52. (Previously Presented) The method of claim 51, further comprising imaging ahead of the tubular body while drilling using a seismic source.

53. (Previously Presented) The method of claim 52, wherein the seismic source is a microseismic source for microseismic imaging ahead of the tubular body.

54. (Previously Presented) The method of claim 52, wherein the seismic source is external.

55. (Previously Presented) A method of acoustic monitoring while drilling into a formation, comprising:

locating a casing string within a wellbore, the casing string having at least one optical sensor attached thereto;

drilling into the formation using a tubular body having an earth removal member operatively attached to its lower end; and

performing acoustic monitoring while drilling into the formation.

56. (Previously Presented) The method of claim 55, wherein performing acoustic monitoring while drilling into the formation comprises monitoring the vibration of the tubular body while drilling into the formation using the tubular body.

57. (Previously Presented) The method of claim 56, wherein the tubular body is a drill string.

58. (Previously Presented) The method of claim 57, wherein the tubular body is a casing string.

59. (Previously Presented) The method of claim 56, wherein performing acoustic monitoring while drilling into the formation comprises monitoring the vibration of the earth removal member while drilling into the formation.

60. (Previously Presented) The method of claim 55, wherein performing acoustic monitoring while drilling into the formation comprises performing acoustic monitoring of drilling fluid used while drilling into the formation.

61. (Previously Presented) The method of claim 60, further comprising adjusting at least one parameter of the drilling fluid based on acoustic monitoring of the drilling fluid.

62. (Previously Presented) The method of claim 55, further comprising adjusting at least one parameter based on the acoustic monitoring while drilling into the formation.